

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today
(1) was not written for publication in a law journal and
(2) is not binding precedent of the Board.

Paper No. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PHILLIP C. YU, DAVID L. BACKFISCH,
JOHN B. SLOBODNIK and THOMAS G. RUKAVINA

Appeal No. 1997-3302
Application No. 08/152,338

ON BRIEF

Before JOHN D. SMITH, WALTZ, and LIEBERMAN, Administrative
Patent Judges.

JOHN D. SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal pursuant to 35 U.S.C. § 134 from the
final rejection of claims 21 through 39.

Claim 21 is representative and is reproduced below:

21. A method for fabricating an electrochromic article

Appeal No. 1997-3302
Application No. 08/152,338

comprising the steps of:

(a) depositing an organic polymer primer coating on a surface of each of two organic polymer substrates,

(b) depositing an electroconductive metal oxide film on each of the primer coatings deposited on said organic polymer substrates,

(c) depositing a film of an electrochromic material on one of the electroconductive metal oxide films deposited in step (b),

(d) depositing a film of a complementary electrochromic material on the other electroconductive metal oxide film deposited in step (b),

(e) assembling the organic polymer substrates of steps (c) and (d) in spaced relationship with the electrochromic and complementary electrochromic films in a facing relationship,

(f) disposing a preformed sheet of ion-conducting polymer between and in contact with the electrochromic and complementary electrochromic films, and

(g) applying heat and pressure to laminate said sheet to said electrochromic films.

As evidence of obviousness, the examiner relies on the following references:

Giglia et al. (Giglia)	4,174,152	Nov. 13, 1979
Huang et al (Huang)	4,361,385	Nov. 30, 1982
Rukavina	4,609,703	Sep. 2, 1986
Oshikawa et al. (Oshikawa)	5,011,582	Apr. 30, 1991
Defendini et al. (Defendini)	5,244,557	Sep. 14, 1993

Appeal No. 1997-3302
Application No. 08/152,338

Appealed claims 21 through 32 and 34 through 38 stand rejected under 35 U.S.C. § 103 as unpatentable over Defendini in combination with either Oshikawa or Giglia and Rukavina. Appealed claims 33 and 39 stand similarly rejected under the same section of the statute as unpatentable over Defendini in combination with either Oshikawa or Giglia and Rukavina further in view of Huang.

We cannot sustain the stated rejections.

The subject matter on appeal is directed to a method for fabricating an electrochromic device having organic polymer substrates and a preformed ion-conducting polymer. For purposes of the issues raised in the present appeal, a significant step of appellants' claimed fabrication method involves the deposition of an organic polymer primer coating on a surface of each of two organic polymer substrates. See step (a) of appealed claim 21. Thereafter, in appellants' method, an electroconductive metal oxide film is deposited on each of the primer coatings of the organic polymer substrates. On one of the electroconductive metal oxide films deposited in the above step, a film of electrochromic material is deposited thereon. On the other electroconductive metal oxide film, a

complementary electrochromic material is deposited. At this point in the claimed process, the organic polymer substrates are assembled in spaced relationship with the electrochromic and complementary electrochromic films in a facing relationship and a preformed sheet of ion-conducting polymer is disposed between and in contact with the electrochromic and complementary electrochromic films. The last step of the claimed process requires the application of heat and pressure to laminate the preformed ion-conducting polymer sheet to the electrochromic films.

As evidence that the herein claimed process would have been obvious to a person of ordinary skill in the art, the examiner principally relies upon the disclosures of Defendini and Rukavina. Referring to the disclosures in Defendini as the "prior art," the examiner contends that the difference between the claimed process and the "prior art" is that the "prior art" does not show the deposition of a primer layer between the transparent substrate and the electroconductive metal oxide layer. The examiner further contends that it is not clear whether the instant "preformed" ion-conductive layer is obvious over the prior art ion-conductive polymer layer.

See the Answer at page 4, first full paragraph. At page 7 of the Answer in his "Response to argument" section of the answer, the examiner further acknowledges that "while Defendini shows the use of glass as transparent substrate, however, it is well known in the art that other materials such as plastic which is polymeric material; glass; ceramics are used as transparent materials for the substrate. . . . " Accordingly, the examiner argues that it would have been obvious to one of ordinary skill in the art to modify the method of Defendini by replacing glass with the plastic material of the "secondary references" since glass and plastic are well known transparent materials for the substrates in the manufacture of electrochromic devices. With respect to the claimed requirement of depositing an organic polymer primer coating on a surface of each of two organic polymer substrates, the examiner contends that it would have been obvious to one of ordinary skill in the art to further modify the Defendini process by incorporating the step of depositing the primer of Rukavina since the adhesion property of the coated substrate is known to be enhanced by the primer layer between the substrate and the metal oxide layer. See the

Answer at page 5, lines 1 through 6.

We find the examiner's theory of rejection to be problematical for a number of reasons. First, as appellants point out in their brief, particularly at page 4, the Defendini patent describes a method for preparing electrochromic glazings, i.e., coated glass laminate structures, which are used in motor vehicles, particularly as sun roofs. See column 1, lines 12 through 19, of this patent. Hence, Defendini is not concerned with "transparent" substrates in general, but to a method for forming glass laminate structures. There is no evidence of record that the support sheets of electrochromic glazings, useful as sun roofs in motor vehicles, are made of anything but glass. Hence, there is no factual basis to support the examiner's broad statement that it would have been obvious to modify the method of Defendini by replacing the glass substrates of Defendini's electrochromic glazing with plastic substrates.

With respect to the applied Rukavina patent, appellants point out that this prior art patent is concerned with providing polymeric primers for acrylic substrates on which

metal oxide films, such as indium oxide, are deposited. However, as appellants point out in their brief at page 9, there is no disclosure in Rukavina relating to the formation of an electrochromic device. As appellants argue, Rukavina is concerned with producing a resistor that generates heat when an electric current is passed through the conductive metal oxide. Thus, Rukavina does not refer to or contemplate the use of electrochromic metal oxides in combination with the electroconductive metal oxide film applied to the acrylic substrate. Accordingly, even assuming for purposes of argument that one of ordinary skill in the art would have been led to modify the Defendini process by replacing Defendini's glass support sheets with plastic support sheets, we find that there is no reasonable suggestion in the combined teachings of the relied on references that would have led one of ordinary skill in the art to use a primer layer as claimed.

Finally, as applied, neither the Oshikawa nor Giglia patents remedy the basic deficiencies in the examiner's stated rejection. The mere fact that the prior art could be modified as proposed by the examiner is not sufficient to establish a prima facie case of obviousness. See In re Fritch, 972 F.2d

Appeal No. 1997-3302
Application No. 08/152,338

1260, 1266, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992). The examiner must persuasively explain why the prior art would have suggested to one of ordinary skill in the art the desirability of the proposed modifications. See Fritch, 972 F.2d at 1266, 23 USPQ2d at 1783-84. In the present case, the examiner has failed to provide persuasive reasons why the Defendini process should be modified as proposed. The decision of the examiner, accordingly, is reversed.

REVERSED

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JOHN D. SMITH)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
THOMAS A. WALTZ)	
Administrative Patent Judge)	APPEALS AND
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